

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number. **2000331927 A**

(43) Date of publication of application: **30.11.00**

(51) Int. Cl. **H01L 21/027**
G02B 13/24
G03F 7/22

(21) Application number: **2000068536**
(22) Date of filing: **13.03.00**
(30) Priority: **12.03.99 JP 11066538**

(71) Applicant: **CANON INC**
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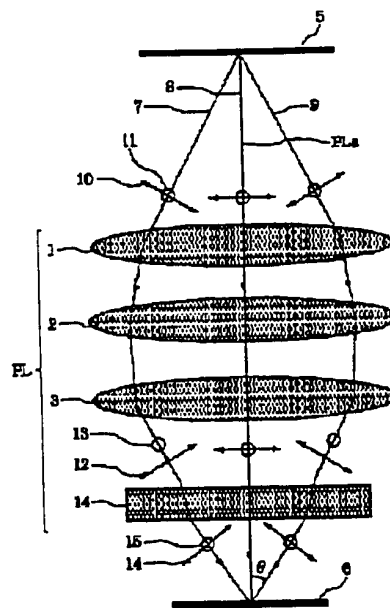
(54) **PROJECTION OPTICAL SYSTEM AND
PROJECTION ALIGNER USING THE SAME**

(57) Abstract:

PROBLEM TO BE SOLVED: To highly precisely image-form a pattern by correcting birefringence having an optical element included in a projection optical system,

SOLUTION: In this projection optical system, a projection optical system PL having plural lens elements 1, 2, and 3 is provided with a birefringence correcting member made of one-axial crystal having a main axis in an optical axial direction and/or materials having distortion distribution equivalent to the one-axial crystal. Thus, birefringence generated by the plural lens elements 1, 2, and 3 can be canceled by the birefringence correcting member.

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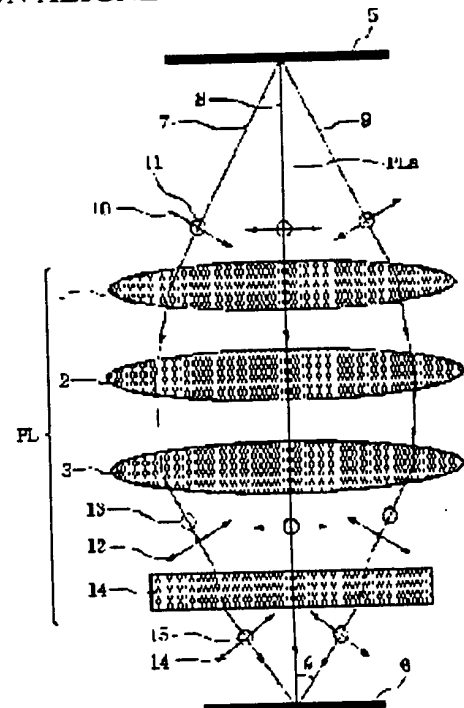
Priority number : 11066538 Priority date : 12.03.1999 Priority country : JP

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